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In re Application of

Breed et al.

Application Number

08/239,978

Filed

5/9/94

Paper No.

21

I hereby request access under 37 CFR 1.14(a)(1)(iv) to the application file record of the above-identified ABANDONED application, which is identified in, or to which a benefit is claimed, in the following document (as shown in the attachment):

United States Patent Application Publication No. \_\_\_\_\_, page, \_\_\_\_\_ line \_\_\_\_\_.

United States Patent Number 5,901,978, column \_\_\_\_\_, line, \_\_\_\_\_ or

WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_.

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US005901978A

**United States Patent** [19]

Breed et al.

[11] Patent Number: **5,901,978**[45] Date of Patent: **\*May 11, 1999**

[54] **METHOD AND APPARATUS FOR  
DETECTING THE PRESENCE OF A CHILD  
SEAT**

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[\*] Notice: This patent is subject to a terminal dis-  
claimer.

[21] Appl. No.: **09/084,641**

[22] Filed: **May 26, 1998**

**Related U.S. Application Data**

[63] Continuation-in-part of application No. 09/047,704, Mar.  
25, 1998, which is a continuation-in-part of application No.  
08/640,068, Apr. 30, 1996, Pat. No. 5,829,782, which is a  
continuation of application No. 08/239,978, May 9, 1994,  
abandoned.

[51] Int. Cl.<sup>6</sup> ..... **B60R 21/32**

[52] U.S. Cl. .... **280/735; 180/272; 342/72;**  
701/45

[58] Field of Search ..... 280/735, 734;  
180/272; 342/72, 70; 701/45, 49

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

3,275,975	9/1966	King	340/1
3,974,350	8/1976	Breed	200/61.53
4,198,864	4/1980	Breed	73/492
4,284,863	8/1981	Breed	200/61.53
4,329,549	5/1982	Breed	200/61.45 M
4,573,706	3/1986	Breed	280/734
4,683,373	7/1987	Tupman	180/272
4,900,880	2/1990	Breed	200/61.45 M
4,933,515	6/1990	Behr et al.	200/61.45 M
4,995,639	2/1991	Breed	280/735
5,071,160	12/1991	White et al.	280/735
5,074,583	12/1991	Fujita et al.	280/735

5,118,134	6/1992	Mattes et al.	280/735
5,330,226	7/1994	Gentry et al.	280/735
5,366,241	11/1994	Kithil	280/735
5,398,185	3/1995	Omura	280/735
5,413,378	5/1995	Steffens, Jr. et al.	280/735
5,446,661	8/1995	Gioutsos et al.	280/735

(List continued on next page.)

**FOREIGN PATENT DOCUMENTS**

0 669 227	8/1995	European Pat. Off.	
3802159	8/1989	Germany	280/735
4023109	1/1992	Germany	
1-197151	8/1989	Japan	180/287
3-42337	2/1991	Japan	180/273
3-159838	7/1991	Japan	
94/22603	10/1994	WIPO	280/735
95/27635	10/1995	WIPO	

**OTHER PUBLICATIONS**

"Trends in Sensing Frontal Impacts", D. Breed et al., SAE  
Paper No. 890750, Feb., 1989.

"A Critique of Single Point Sensing", D. Breed et al., SAE  
Paper No. 920124, Feb., 1992.

"Mechanism of Injury From Air Bag Deployment Loads",  
Lau et al., *Accid. Anal. & Prev.*, vol. 25, No. 1, pp. 29-45,  
1993.

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[57] **ABSTRACT**

Method and system for detecting the presence of the child  
seat on a seat in which information about contents of the seat  
is obtained and a signal is generated based on any contents  
of the seat, a different signal being generated for different  
contents of the seat when such contents are present on the  
seat. The signal is analyzed in order to determine whether  
the contents of the seat include a child seat, and in a  
preferred embodiment, a child seat in a rear-facing orienta-  
tion. Another system within the vehicle may be affected or  
controlled based on the determination of whether a child seat  
is present on the seat. The analysis of the signal is preferably  
by pattern recognition techniques that can recognize and  
thus identify the contents of the seat.

**21 Claims, 22 Drawing Sheets**